

MassGIS ArcGIS8 Shapefile DataViewer Instructions

Updated 5/1/03

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If you have ArcGIS 8 (either the ArcView, ArcEditor or ArcInfo version) or higher installed on your machine you will be able to access the ArcMap DataViewer located in \ArcGIS8\MassGIS_SHP_VIEWER.mxt.

CONTENTS OF THE CD

On the CD there should be an **ArcGIS8** and a **gisdata** folder. These are the two folders required to run the DataViewer. When you copy the files from the CD, those 2 folders MUST stay together in order to utilize the DataViewer properly.

For Example:

C:\MassGIS_Viewer\ArcGIS8
C:\MassGIS_Viewer\gisdata

Under the gisdata folder there should be between 1 and 3 folders. All viewers contain the folder 'men1', which contains all the shapefiles. If you ordered imagery with your viewer, there should be a folder called 'Images' which has all the tiles of imagery within subfolders. Finally if you order data using a watershed as your extent there will be a folder titled 'watrshed', which contains all the files necessary to utilize the Watershed Analyst tools extension.

NOTE: The watershed Analyst tools extension is only available in ArcView 3.x

Under the **ArcGIS8** folder is the actual DataViewer which has been saved as a template (.mxt) and the 3 tables the program uses, themeinv.dbf, themeinv2.dbf and zoominv.dbf. There are also 2 folders, **Lyr_files**, which stores all the files used to properly display the data in the viewer, and **docs**, which contains a digital copy of this document.

STARTING THE PROGRAM

The first time you start the DataViewer, double clicking on the file (MassGIS_SHP_VIEWER.mxt) will open the program.

In order for the program to know where the data is located a text file (massgis_viewer_pathname.txt) is created in the same location as the MassGIS_SHP_VIEWER.mxt, within the ArcGIS8 folder. This file contains the path to the ArcGIS8 folder.

Individual Use:

If you loaded the Data Viewer on your computer for your own use, then you will have full permissions to read and write to the ArcGIS8 folder.

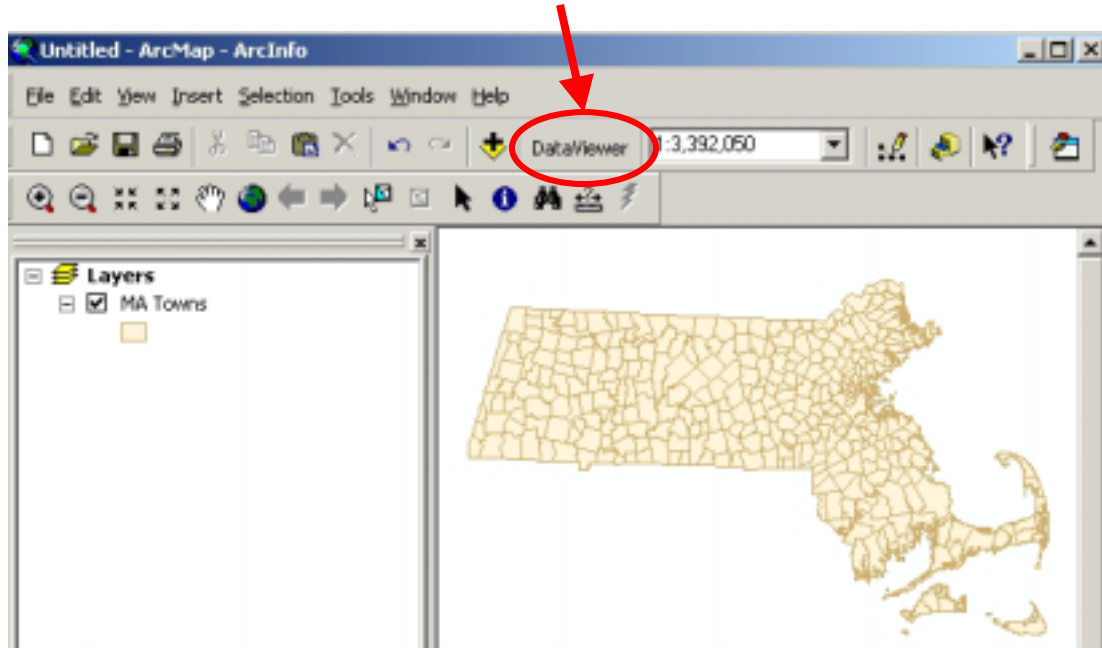
Network Use:

If the Data Viewer is being loaded on a network for shared use then there are a couple of key points to consider:

- 1) The location of the Data Viewer on the network MUST be in a place where everyone sees the path the same. On a network, the text file is written with the server name, instead of a drive letter, which will allow individuals to customize the drive letter used to map the path to the network. Open up the text file to verify that everyone can see the path listed.
- 2) Writing to a network drive is often a problem with read/write permissions. In version 2 of the Data Viewer, a new empty table has been included to allow you to add your own data. IT is recommended that one or two people, who have write permission, be responsible for adding your own data to the viewer. This can also reduce problems with people trying to edit the same table at the same time.

SAVING THE TEMPLATE (MassGIS SHP VIEWER.mxt) FILE

The project should open up a new Untitled map document with a layer displaying all Massachusetts town. Replacing the ArcView data viewer A and Z buttons is the new DataViewer Button

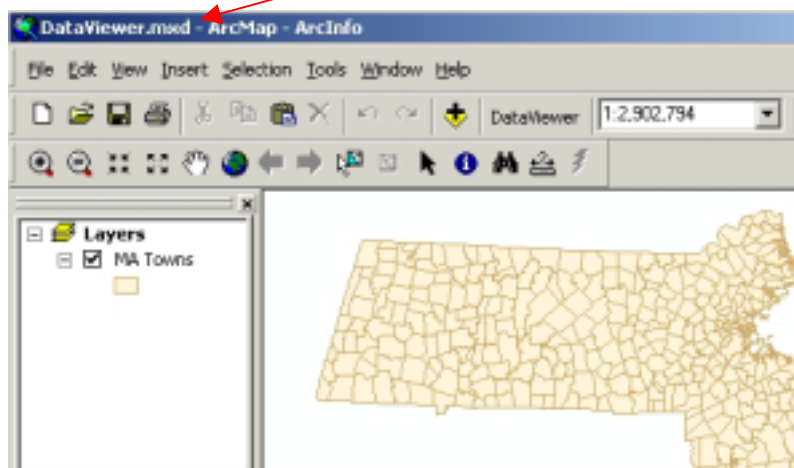


By opening the mxt, you have opened a new ArcMap document that references the template file. You can now (and should) save the document in either the same area as the mxt, or in a separate area (as long as the data and mxt stay in the same place). By doing this you will preserve the template project. You will then be able to re-open the template and save it again, allowing if necessary for multiple copies of the Data Viewer.

File -> Save As... Then you will be able to access the DataViewer as a regular ArcMap Project, with a reference to the mxt. This will also preserve the mxt, and keep it safe from any accidental changes.

Once you save the file as an mxd, the file name will appear in the top left portion of the screen.

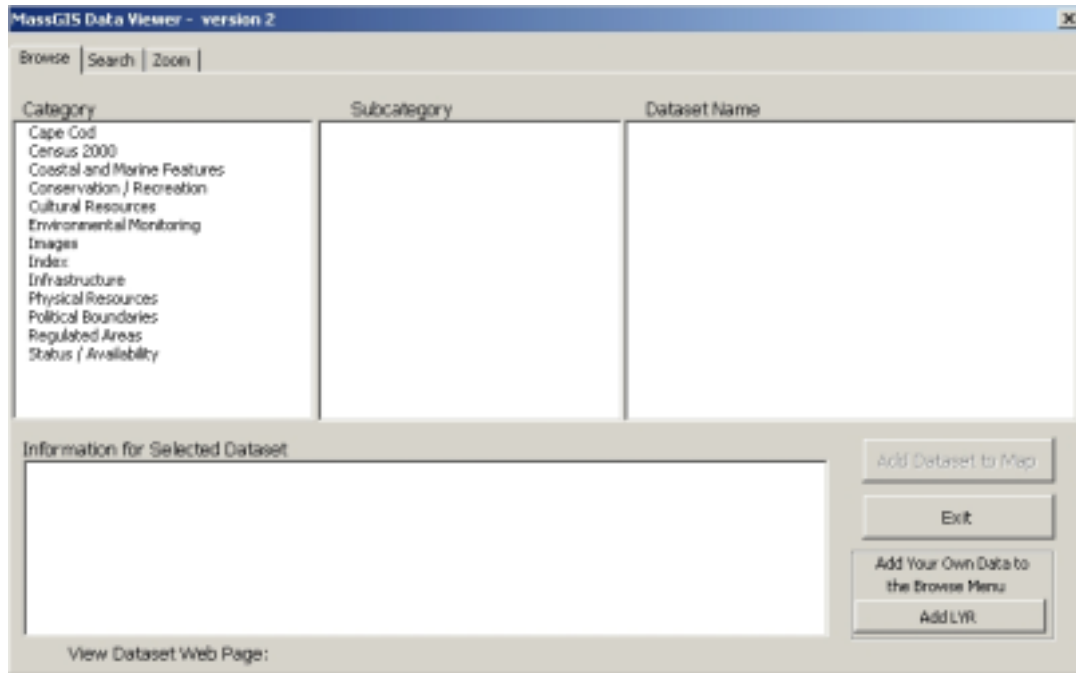
Example: Saving the file as 'DataViewer.mxd'



Once you have saved the file as an mxd, you can now start using the DataViewer.

USING THE DATA VIEWER

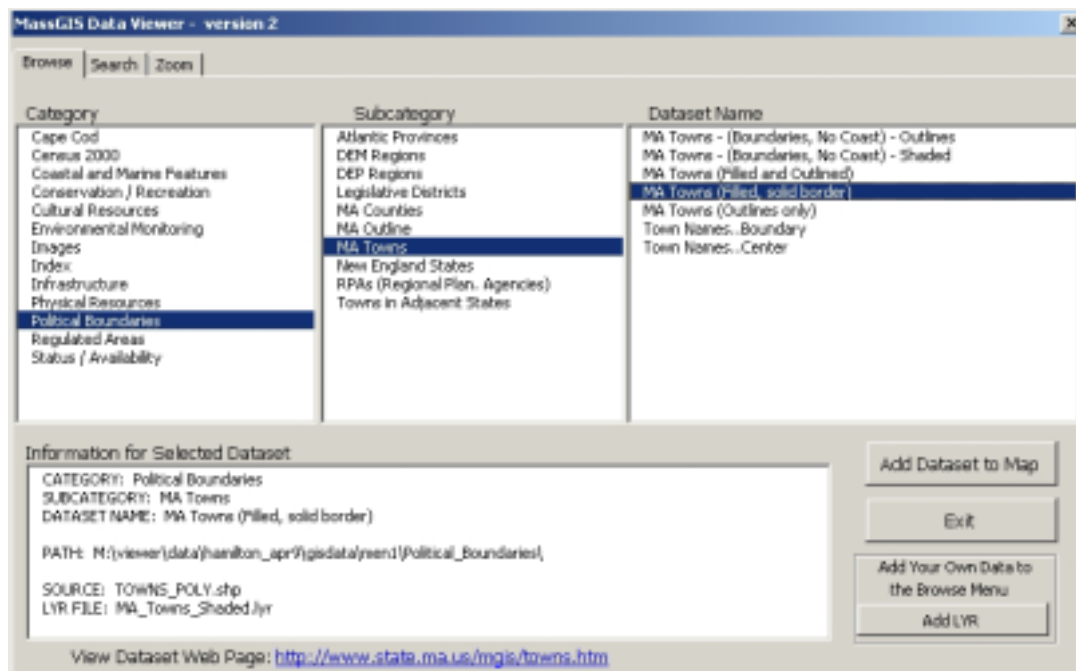
Clicking the DataViewer button will bring up the following which contains 3 tabs: Browse, Search, and Zoom.



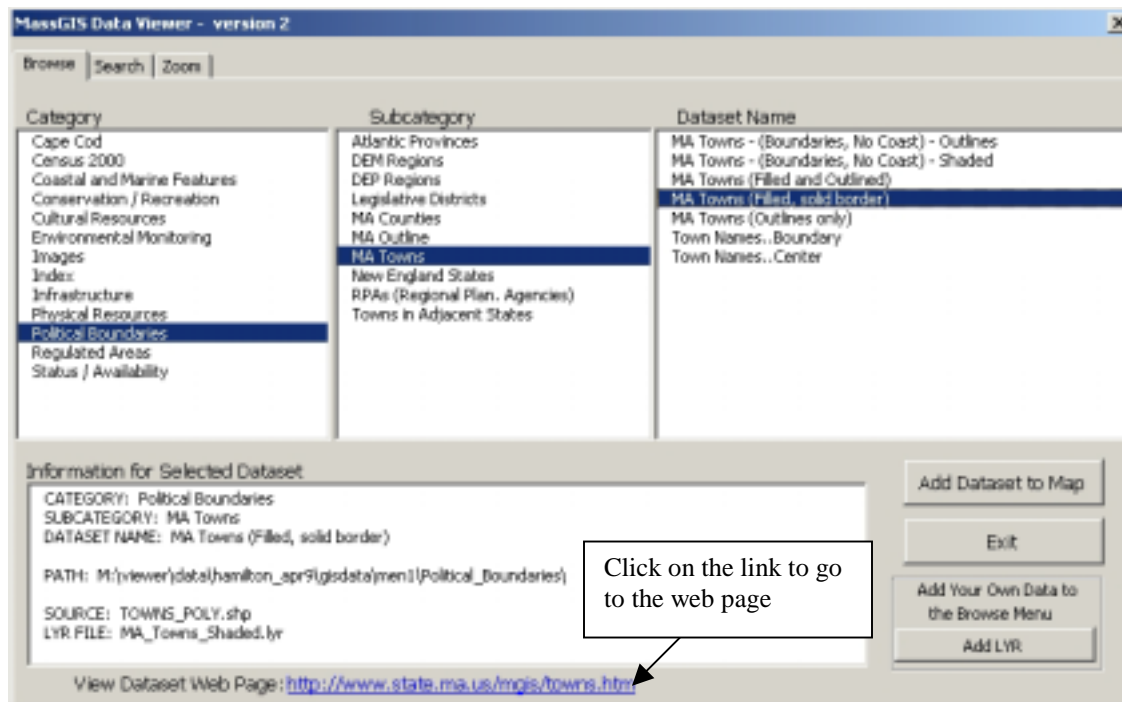
BROWSE:

To load a data layer click through the menu. Follow the Category -> Subcategory -> Dataset Name windows. Once you click on the last menu item (Dataset Name), the text box titled "Information for Selected Dataset" will be populated with details about the selected Dataset, including the menus choices to the dataset, the path to the shapefile and the name of the lyr file. You can load the dataset by either double clicking on the value under Dataset name or by selecting the value and clicking the 'Add Dataset to Map' button.

NOTE: When you add data layers they will be all be turned off (unchecked) when they first load.



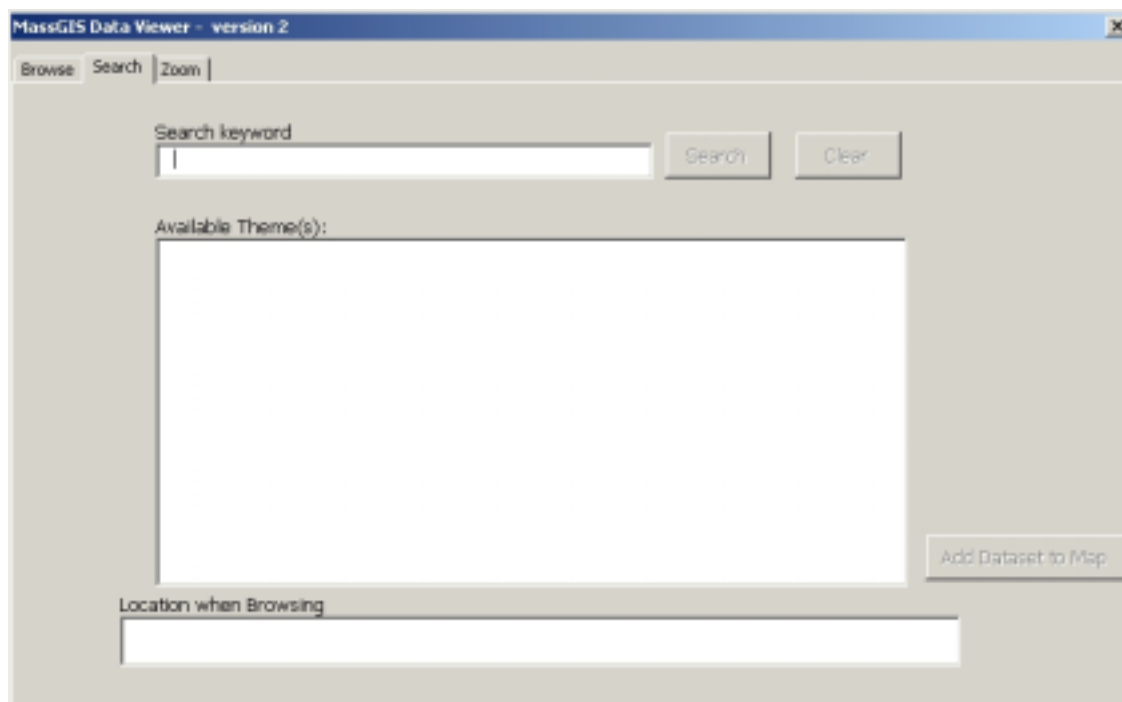
You can also view the associated web page on the MassGIS web site describing the dataset, by clicking on the link at the bottom of the page.



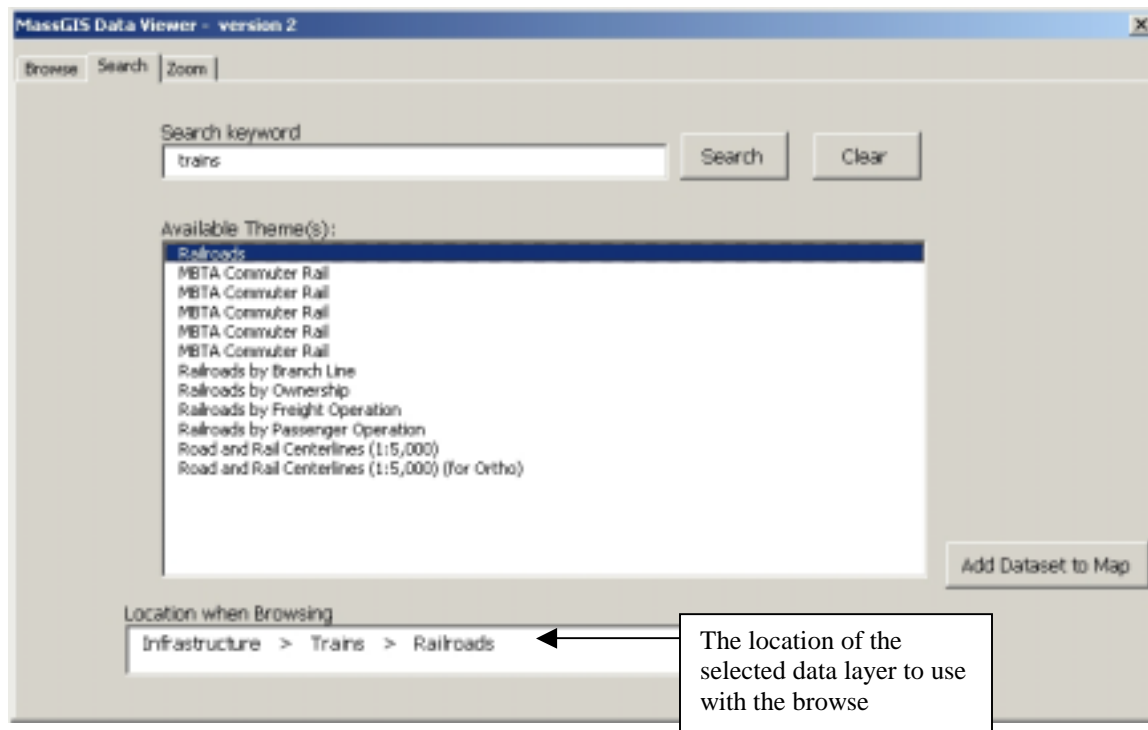
NOTE: The mouse pointer will not change to a hand symbol when hovering over the link, but clicking on the link will still work.

SEARCH:

Under the search tab you can search through the data to find all data layers that match certain keywords. Type the keyword in the text box and click 'Search'. Any layers that match will then be displayed in the list below.



An Example of searching for all data layers associated with trains.

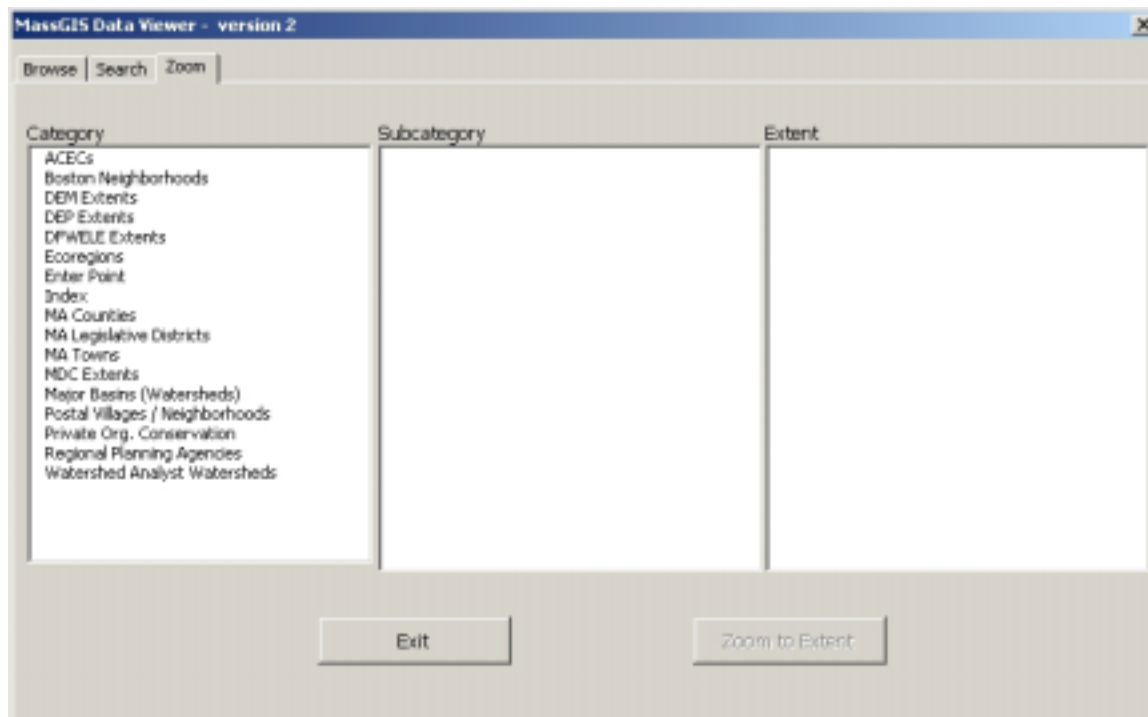


If you find a matching data layer you want to add, select it from the list, which fills in the location when browsing the data (for future reference), and click the 'Add Dataset to Map' button.

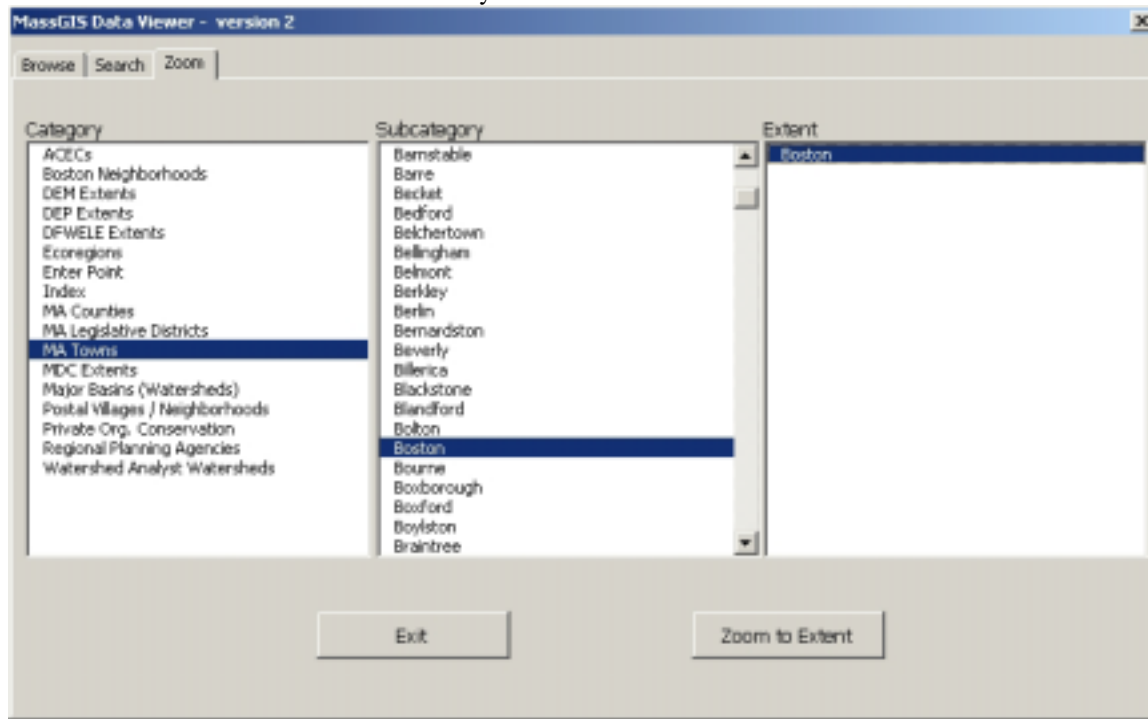
ZOOM:

The zoom section has three menu selections, just like the browse section.

Category -> Subcategory -> Extent



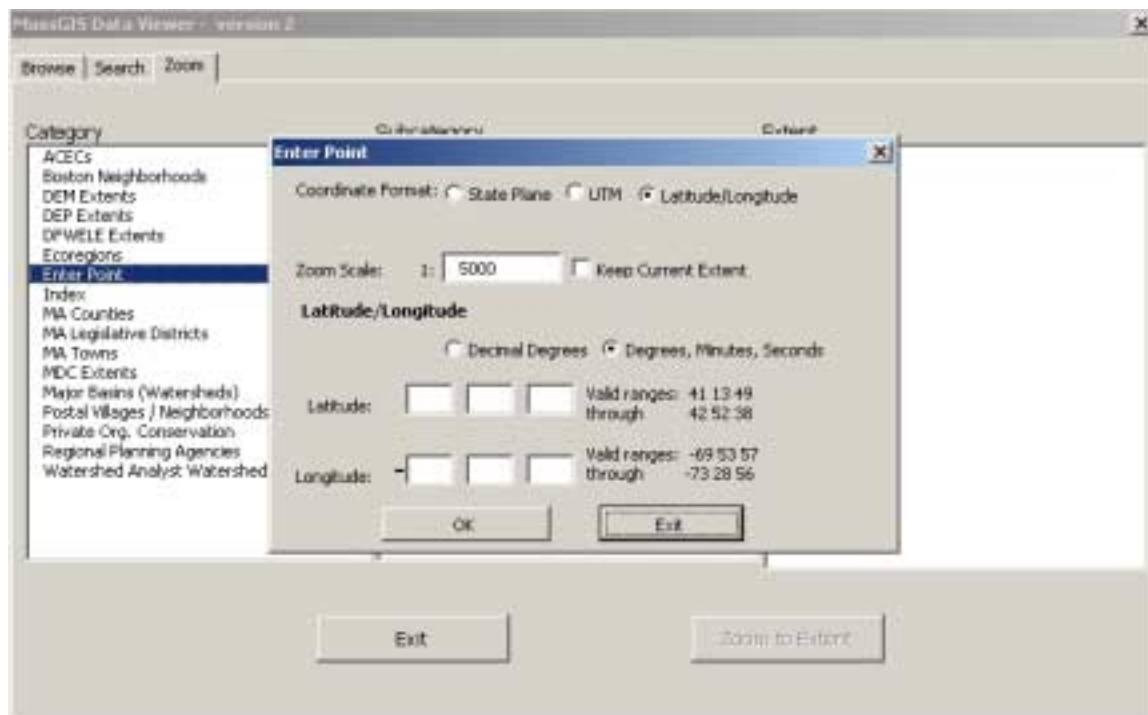
The Zoom to Extent button is disabled until you make a selection in the third box.



After you select the extent, you can zoom into the area by either double-clicking or by clicking the 'Zoom to Extent' button.

ENTER POINT:

In the zoom section, one of the options is Enter Point. By selecting it, a new screen will be displayed.



The Enter Point Screen will allow you to enter coordinates and zoom to a point on the map. MassGIS data is projected as NAD83 Stateplane meters. Since your coordinates can come from different coordinate systems, datums, zones and units, they will be converted to NAD83 Stateplane meters in order to zoom to the point on the map.

Accepted coordinates come from:

- NAD83 State Plane meters
- NAD83 State Plane feet
- NAD27 State Plane feet
- UTM NAD83 State Plane meters, Zone 18
- UTM NAD83 State Plane meters, Zone 19
- UTM NAD27 State Plane meters, Zone 18
- UTM NAD27 State Plane meters, Zone 19
- Latitude/Longitude in Degrees Minutes, Seconds
- Latitude/Longitude in Decimal Degrees

Select the appropriate options that apply to your coordinates for the coordinate systems, datums, zones and units.

Enter Point

Coordinate Format:

☒ State Plane

☐ UTM

☐ Latitude/Longitude

Datum:

☐ NAD27

☒ NAD83

Zoom Scale:

1:

☐ Keep Current Extent

NAD27/83

Datum:

NAD83

Units:

☒ Meter

☐ Feet

East/West: (X)

Valid ranges: 33861 - 330847

North: (Y)

Valid ranges: 777514 - 959748

OK

Exit

Example: Entering a Coordinate in UTM, NAD83, meters, Zone19

Enter Point

Coordinate Format:

☐ State Plane

☒ UTM

☐ Latitude/Longitude

Datum:

☐ NAD27

☒ NAD83

Zoom Scale:

1:

☐ Keep Current Extent

UTM

Units:

Meter

Zone:

☐ Zone 18

☒ Zone 19

East/West:

Range: 127100 - 423200

North:

Range: 4565500 - 4750100

OK

Exit

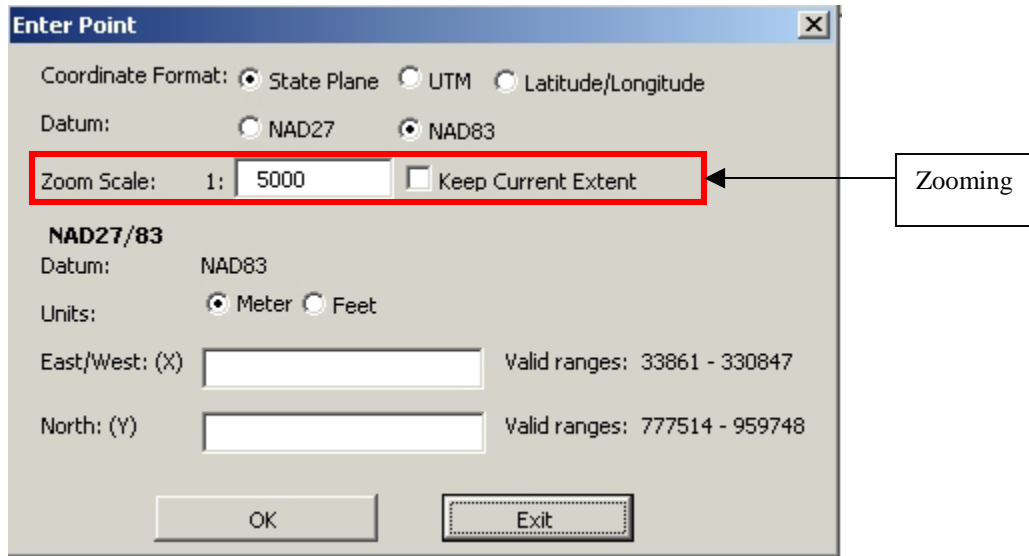
UTM Coordinates

NAD83 Datum

Meters

Zone19

When you enter the Coordinates to zoom to, you can also control the extent to which you zoom in.



Enter Point

Coordinate Format: ☒ State Plane ☐ UTM ☐ Latitude/Longitude

Datum: ☐ NAD27 ☒ NAD83

Zoom Scale: 1: 5000 ☐ Keep Current Extent

NAD27/83

Datum: NAD83

Units: ☒ Meter ☐ Feet

East/West: (X) Valid ranges: 33861 - 330847

North: (Y) Valid ranges: 777514 - 959748

OK Exit

The default zoom scale is 1: 5000. You can change the zoom scale or click the checkbox next to Keep Current Extent to not zoom to the point.

When you click OK, a red X will appear at your coordinates, either zoomed in based on the scale or drawn at the current extent.

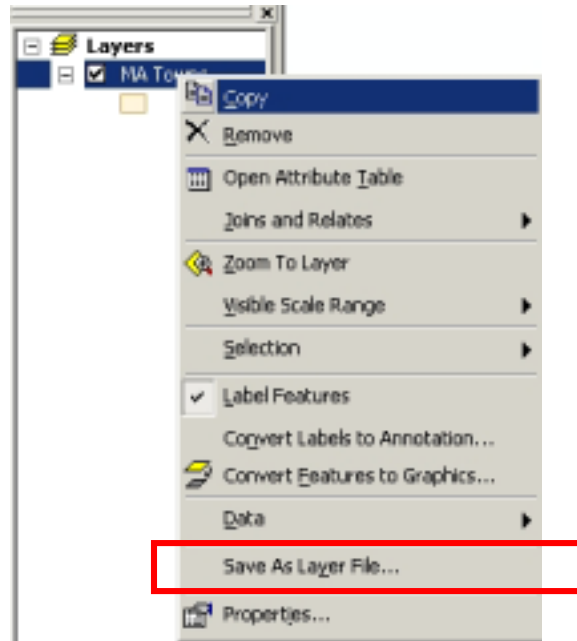


ADDING YOUR OWN DATA

In addition to being able to browse through different Categories of MassGIS data, you can now add your own spatial data to the Data Viewer, for easy access.

Your spatial data can be in a variety of formats, including Shapefiles, SDE layers and Personal Geodatabases. Overall, if you can create a lyr file from your data, you can add it to the viewer.

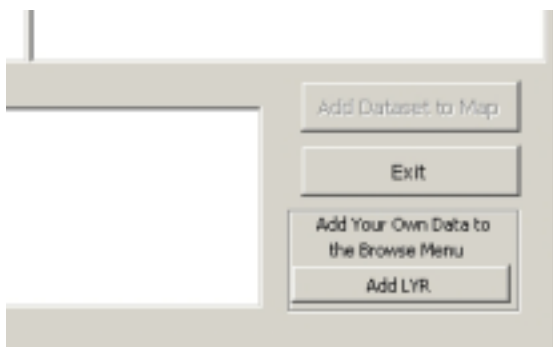
The first step, before you add your data to the Data Viewer, is to figure out how you want to display it. Load the original data into ArcMap and set the properties, such as symbolization, labeling, and any joins/relates. When you are happy with the results, right click on the data layer in the Layers List and Select 'Save as Layer File'.



Save the lyr file in an area, accessible to the Data Viewer, giving it a name that you will understand.

NOTE: You will need to remember the locations and names of the Data Source and the lyr file.

In the Data Viewer, within the Browse section at the bottom right is a button title 'Add LYR'.



By clicking the button, you will bring up the screen where you will add the information about the data you are adding.

The screenshot shows a dialog box titled "Adding your own LYR to Data Viewer". It is divided into four steps. Step 1, "Choose Menu options when Browsing Data", contains three sections: "Category:", "Subcategory:", and "Dataset Name:". Each section has a radio button for "Select an Existing" and a radio button for "Enter a New". The "Category:" section has a dropdown menu for "Select an Existing Category" and a text box for "Enter a New Category". The "Subcategory:" section has a dropdown menu for "Select an Existing Subcategory" and a text box for "Enter a New Subcategory". The "Dataset Name:" section has a text box for "Enter a New Dataset Name". Step 2, "Set LYR Properties", has two sections: "Browse to Source File" and "Browse to LYR", each with a text box and a "Browse" button. Step 3, "(Optional) Enter Keywords for Searching", has a text box for "Enter words separated by spaces". Step 4, "(Optional) Enter any Comments about LYR", has a text box for "Comments:". At the bottom are two buttons: "Write LYR to themew2.dbf" and "Exit".

STEP 1: Choose Menu Options when Browsing Data

When you browse through the Data Viewer, you are selecting the Category, Subcategory and Dataset. In order to add your own data, you will have to either select or enter the choices that will appear in the Data Viewer, to get to your data.

Category

Start by picking the Category, which is the first option that appears when you start the DataViewer. You can select an option from one of the existing categories, in the pull down list. This list will include all Categories from the MassGIS data and any Categories you have already added.

This screenshot is similar to the previous one, but the "Select an Existing Category" dropdown menu is open, showing a list of categories: "Case.Cod", "Census 2000", "Coastal and Marine Features", "Conservation / Recreation", "Cultural Resources", "Environmental Monitoring", "Images", and "Index". The "Enter a New Category" radio button is also visible.

If you would rather start a new main category, then click the circle next to 'Enter a New Category'. This will activate the text box allowing you to enter a new category name.

Adding your own LYR to Data Viewer

STEP 1: Choose Menu options when Browsing Data

Category:

Select an Existing Category ☐

OR

Enter a New Category ☒

Subcategory:

Select an Existing Subcategory ☒

OR

Enter a New Subcategory ☐

Dataset Name:

Enter a New Dataset Name

Subcategory

If you picked an existing Category, then the pull down list of all of associated Subcategories is populated. Again you can choose an existing option, or enter a new Subcategory.

Adding your own LYR to Data Viewer

STEP 1: Choose Menu options when Browsing Data

Category:

Select an Existing Category ☒ Physical Resources

OR

Enter a New Category ☐

Subcategory:

Select an Existing Subcategory ☒

OR

Enter a New Subcategory ☐

Dataset Name:

Enter a New Dataset Name

- Abandoned Cranberry Bogs
- Anadromous Fish
- Aquifers
- Ecoregions
- Geographic Names
- Hydrography (Water Features)
- Land Use
- Ocean Mask

Adding your own LYR to Data Viewer

STEP 1: Choose Menu options when Browsing Data

Category:

Select an Existing Category ☒ Physical Resources

OR

Enter a New Category ☐

Subcategory:

Select an Existing Subcategory ☐

OR

Enter a New Subcategory ☒

Dataset Name:

Enter a New Dataset Name

Dataset

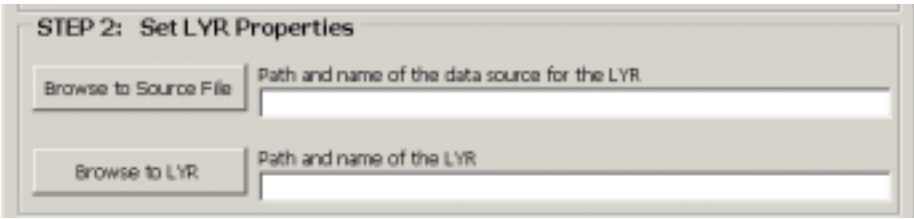
Since the Dataset Names, describe the layer, each name in the Dataset must be unique, so you will have to type in a new Dataset Name.

Dataset Name:

Enter a New Dataset Name

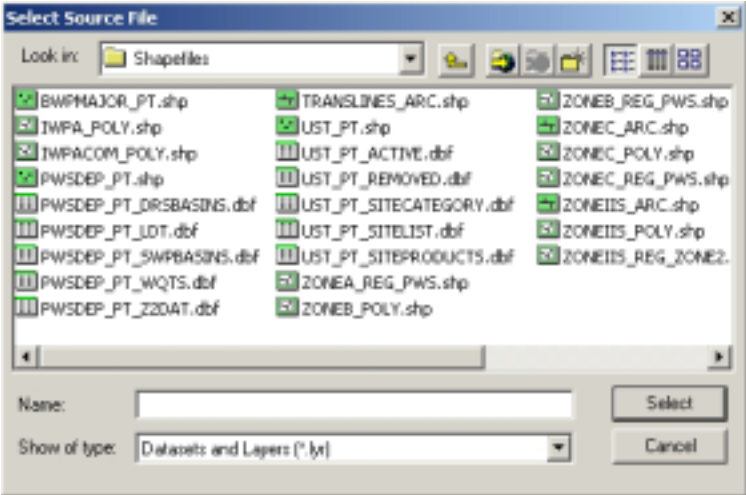
STEP 2: Set LYR Properties

This is where you will add the information about your data, so the Data Viewer can find the data source and the lyr file.

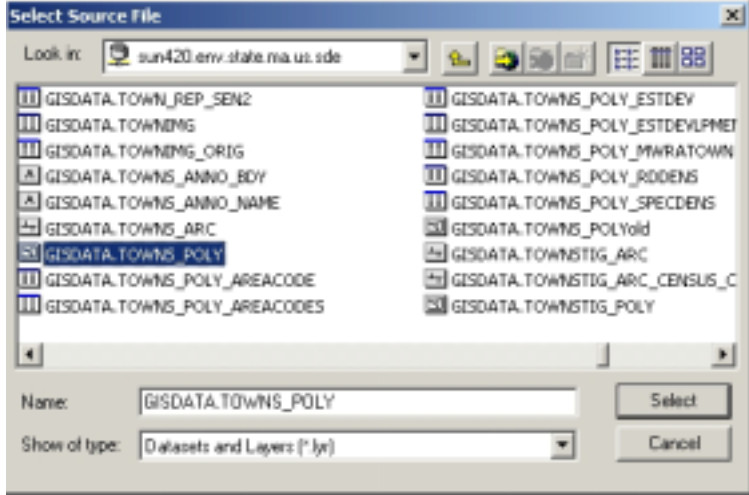


First, either type in the path to the data source, or browse to it with the 'Browse to Source File' button.

Browsing to a Shapefile

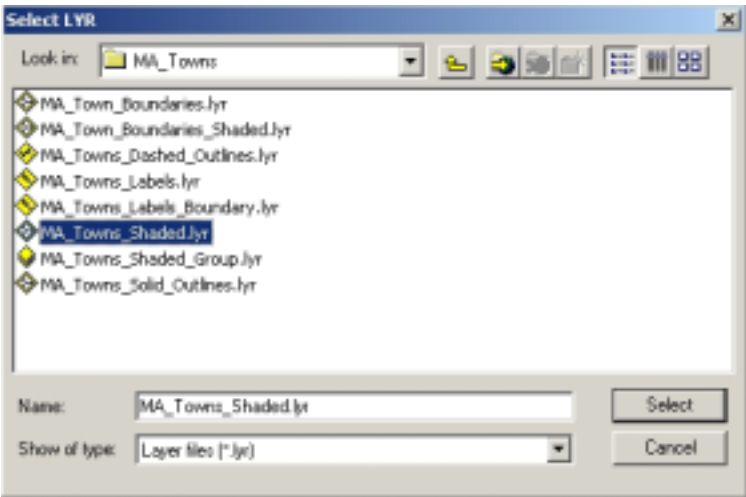


Browsing to an SDE layer



The path and the name of the data source must be included.

Then do the same thing again for the Lyr file, either typing in the path to the Lyr file, or browsing to it with the 'Browse to LYR' button.



STEP 3: Keywords

This is an optional step, where you can enter words to be used in the search feature. These words should be related to the data layer, to make it easier to find. This can be helpful when sharing the data with others or when adding a lot of data since it saves time to not have to look through all the levels in the browse section.

STEP 4: Comments

This is the other optional step, where you can enter any comments or a description about the particular data, such as the date of the data, who collected the data, general description, etc.

When you have finished filling in the appropriate fields, you can then write this information to the database. Clicking the 'Write to Themeinv2' button will fill the values into the database, and alert you to any missing information that is required. When the data is successfully written to the database, a message box will appear confirming the completion.

The theminv2.dbf table is supplied with the viewer. Initially it is an empty database, only containing the required fields. You can populate this table through the Data Viewer, with the method above.

After you click OK, you can either enter another lyr file to the database or click the 'Exit' button to leave the 'Adding your own LYR to Data Viewer' screen. When you exit, the program will refresh the Data Viewer to incorporate the new data that you added.

PROBLEMS LOADING IMAGES

****When you load images into the Data Viewer, there will be a red exclamation mark next to the layer, and it will not draw.**

Unfortunately the image files keep the original hard coded path (due to a bug in the ESRI software, which is currently being fixed) to image catalog lyr files. So the files do not know where you have saved the data on your computer.

To get around this you will have to reset the data source to the image catalog and resave the lyr file.

1. Load the Image catalog, either with the Data Viewer (which will display the red exclamation mark), or with the regular Add Data button within ArcMap.



All image catalogs are located under \gisdata\images\ (image folder name).

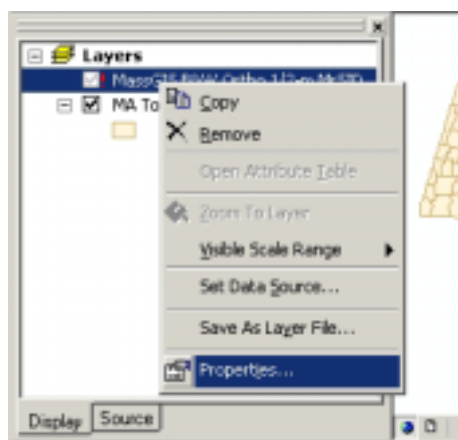
Make sure you pick the Image catalog, that ends with "_NOENV.dbf", the other image catalog in the folder is for ArcView 3.x

MassGIS BW Orthos (Half-meter SIDs):	\gisdata\images\halfmsid\ HALFMSID_NOENV.dbf
MassGIS BW Orthos (One-meter SIDs):	\gisdata\images\oq1sid\ OQ1SID_NOENV.dbf
Half-Meter Color Orthos (MrSID):	\gisdata\images\coqhsid\COQHSID_NOENV.dbf
Half-Meter Color Orthos Mosaics (MrSID):	\gisdata\images\coq2001halfmsidm\COQ2001HALFMSIDM_NOENV.dbf
One-Meter Color Orthos (MrSID):	\gisdata\images\coqhd1sid\COQHD1SID_NOENV.dbf
USGS Topographic Maps (Multiple MrSIDs):	\gisdata\images\quadsid\QUADSID_NOENV.dbf

NOTE: If you want to add the Image Catalog using the Add Data button, then the name of the image catalog displayed in the list of Layers, is the same as the image catalog. You might want to rename to the layer, before saving it.

If you used the Add Data button, then you can skip to step 5, otherwise you will now need to reset the data source, completing all of the following steps.

2. Right click on the image catalog in the table of contents and select Properties.



3. This brings up the Layer properties window.

Under the Source tab Click the 'Set Data Source' button.



This will bring up the browse window. You will need to browse to the associated image catalog from here. Make sure you select the image catalog with “(name)_NOENV.dbf”.

MassGIS BW Orthos (Half-meter SIDs):	<code>\gisdata\images\halfmsid\ HALFMSID_NOENV.dbf</code>
MassGIS BW Orthos (One-meter SIDs):	<code>\gisdata\images\oq1sid\ OQ1SID_NOENV.dbf</code>
Half-Meter Color Orthos (MrSID):	<code>\gisdata\images\coqhsid\COQHSID_NOENV.dbf</code>
Half-Meter Color Orthos Mosaics (MrSID):	<code>\gisdata\images\coq2001halfmsid\COQ2001HALFMSIDM_NOENV.dbf</code>
One-Meter Color Orthos (MrSID):	<code>\gisdata\images\coqhd1sid\COQHD1SID_NOENV.dbf</code>
USGS Topographic Maps (Multiple MrSIDs):	<code>\gisdata\images\quadsid\QUADSID_NOENV.dbf</code>

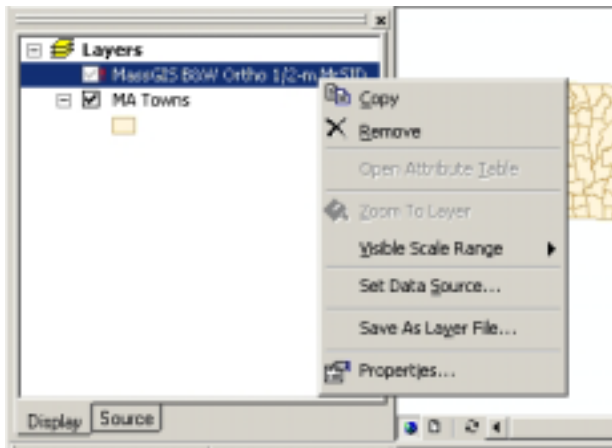
4. Once you select the image catalog press the Add button on the browse window, and then the OK button on the Layer Properties window. Your image catalog should now work (you may have to refresh your screen first).

- To preserve the correction to the catalog for future use, you will have to resave the lyr file.

Names of the LYR files:

MassGIS BW Orthos (Half-meter SIDs):	BW_Ortho_Halfm_Indiv_MrSID.lyr
MassGIS BW Orthos (One-meter SIDs):	BW_Ortho1m_Indiv_MrSID.lyr
Half-Meter Color Orthos (MrSID):	Half_Meter_Color_Orthos_(MrSID_indiv).lyr
One-Meter Color Orthos (MrSID):	One_Meter_Color_Orthos_(MrSID_indiv).lyr
USGS Topographic Maps (Multiple MrSIDs):	USGS_Topographic_Map_(Indiv_MrSID).lyr

- Right click on the corrected image catalog layer and select 'Save as Layer File'.



Save the LYR in \ArcGIS8\Lyr_files folder with the proper name as listed above, overwriting the existing lyr file.

NOTE: Occasionally, something happens and the lyr file does not get overwritten. Using your Windows Explorer, you should go to the \ArcGIS8\Lyr_files folder and refresh the screen, and check the Modified date of the lyr file you just replaced, to make sure it was overwritten. If not, then **delete** the current LYR file associated with that image type and save it again.

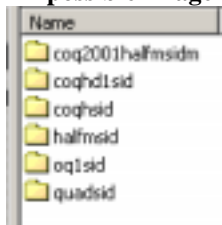
LOADING A MULTIPLE CD SET

If your Data Viewer, is more then one CD, then you will need to load **ALL** the data from **ALL** the CDs first, **BEFORE** running the Data Viewer.

Decide where you are going to store the data (ie. C:\Viewer) and make sure you have enough disk space based on the size of the CDs.

Multiple CDs have been set up to mimic the proper structure necessary to run the Data Viewer. For example, if you copied the files from CD1 there might be the folder \gisdata\Images. On CD2, you might see the folder \gisdata\Images as well. Double click the \gisdata\Images folder on CD2 and there should be another folder which contains the actual image tiles.

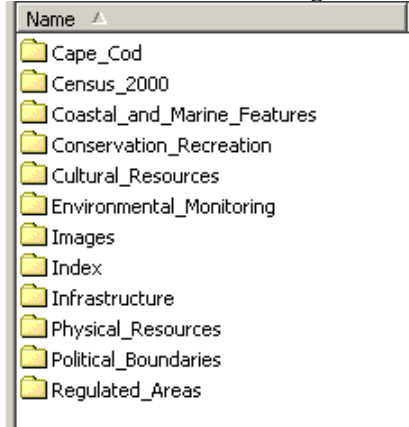
All possible Imagery folders under '\gisdata\Images'



Select the folder(s) under \gisdata\Images on CD2 and copy (Ctrl+C) them. Paste (Ctrl+V) the folder(s) into the \gisdata\Images folder on your computer. Repeat this for any other CDs you received.

Sometimes, it is not just the images, but also the shapefiles that are too big to fit on one CD. In this case, after copying the files from CD1, go into \gisdata\men1. There should be a total of 12 folders here.

All Folders located under 'gisdata\men1'



If not all these folders exist on CD1, the folders may be on another CD under \gisdata\men1. Copy these folders from the CD to your hard drive and paste them into \gisdata\men1.

Another problem may be the size of the files within the folders under \gisdata\men1. One example could be that the files under \gisdata\men1\Physical_Resources are too big to fit on 1 CD, so they might be divided onto separate CDs. This means you would find the folders \gisdata\men1\Physical_Resources on more than one CD.

If you have already copied the \gisdata\men1\Physical_Resources folder from CD1 and there are shapefiles within the Physical_Resources folder, you will have to copy(Ctrl+C) the files (not the folder, or you will remove the files that already exist on your hard drive under Physical_Resources) from \gisdata\men1\Physical_Resources on CD2 and paste (Ctrl+V) into the \gisdata\men1\Physical_Resources folder on your hard drive.

LOADING SEPARATELY ORDERED IMAGES

If you ordered Imagery that is not included in with the Data Viewer CD(s), such as statewide Orthophotos, USGS topographic maps, and Color Orthophoto mosaics, you can incorporate them into the Data Viewer.

Check the files on CD1 of your Imagery CDs. If you have the associated image catalog that can be used to reference the images then you can continue.

MassGIS BW Orthos (Half-meter SIDs):	\gisdata\images\halfmsid\ HALFMSID_NOENV.dbf
MassGIS BW Orthos (One-meter SIDs):	\gisdata\images\oq1sid\ OQ1SID_NOENV.dbf
Half-Meter Color Orthos (MrSID):	\gisdata\images\coqhsid\COQHSID_NOENV.dbf
Half-Meter Color Orthos Mosaics (MrSID):	gisdata\images\coq2001halfmsidm\COQ2001HALFMSIDM_NOENV.dbf
One-Meter Color Orthos (MrSID):	\gisdata\images\coqhd1sid\COQHD1SID_NOENV.dbf
USGS Topographic Maps (Multiple MrSIDs):	\gisdata\images\quadsid\QUADSID_NOENV.dbf

If you do not have the dbf for the image catalog, then you can download it, from the web and place it in the associated folder, as seen above.

Using the Add data  button in ArcMap, browse to the Image Catalog and load it into ArcMap.

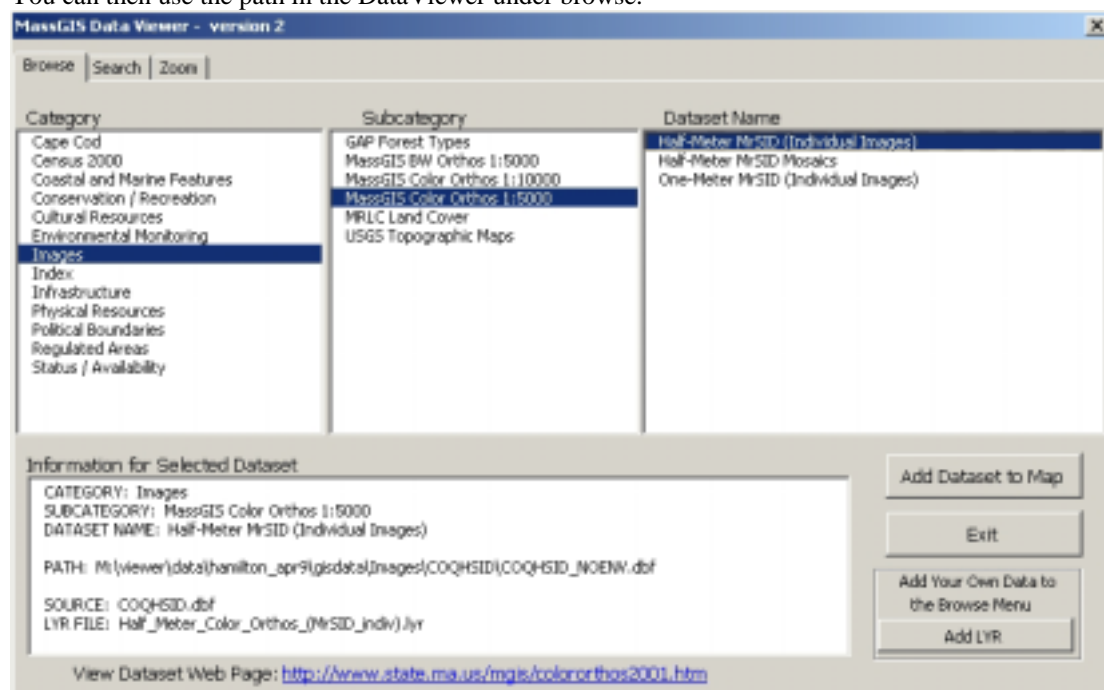
You can change the displayed name under General Properties, and then right click on the image catalog and select 'Save as Layer File' and save in the \ArcGIS8\Lyr_files\ folder with the proper name as listed above, overwriting the existing lyr file.

Names of the LYR files:

MassGIS BW Orthos (Half-meter SIDs):	BW_Ortho_Halfm_Indiv_MrSID.lyr
MassGIS BW Orthos (One-meter SIDs):	BW_Ortho1m_Indiv_MrSID.lyr
Half-Meter Color Orthos Mosaics (MrSID):	Half_Meter_Color_Orthos_(MrSID).lyr
Half-Meter Color Orthos (MrSID):	Half_Meter_Color_Orthos_(MrSID_indiv).lyr
One-Meter Color Orthos (MrSID):	One_Meter_Color_Orthos_(MrSID_indiv).lyr
USGS Topographic Maps (Multiple MrSIDs):	USGS_Topographic_Map_(Indiv_MrSID).lyr

NOTE: Occasionally, something happens and the lyr file does not get overwritten. Using your Windows Explorer, you should go to the \ArcGIS8\Lyr_files folder and refresh the screen, and check the Modified date of the lyr file you just replaced, to make sure it was overwritten. If not, then **delete** the current LYR file associated with that image catalog and save it again.

You can then use the path in the DataViewer under browse.



For question about installation and use of the MassGIS ArcGIS8 Data Viewer, use this form to request help: http://www.state.ma.us/mgis/Arc8_vwr_help.htm or Contact:

Susan Brunton phone: 617-626-1033 email: Susan.Brunton@state.ma.us